

**THIRD SEMESTER INTERNAL EXAMINATION, SEPTEMBER 2025**  
**MINOR COURSE IN STATISTICS**  
**STA3MN201-STATISTICAL INFERENCE USING R**

Time: 1 Hour

Max. Marks: 35

Name:	Marks Scored	Section A		Total Marks
Class:		Section B		
		Section C		

**SECTION A**

**(Each question carries 3 marks, Max marks for section-7)**

1. Define (i) Point estimation (ii) Interval estimation
2. Write any four properties of Maximum Likelihood estimators.
3. Distinguish between Type I and Type II errors.

**SECTION B**

**(Each question carries 6 marks, Max marks for section-18)**

4. Explain one tailed and two tailed tests.
5. Explain the procedure of testing the mean of a normal population.
6. Suppose a sample of 500 people interviewed and 200 of them stated in favour of a certain candidate for president. Obtain the 98% confidence limits for the population proportion in favour of the candidate.
7. Let  $x_1, x_2, x_3, \dots, x_n$  be a random sample drawn from a given population with mean  $\mu$  and variance  $\sigma^2$ . Show that the sample mean is an unbiased estimator of population mean.

**SECTION C**

**(Answer any one question, Each question carries 10 marks)**

8. Explain the desirable properties of a good estimator
9. A sample of 900 members is found to have a mean of 3.4cm and standard deviation 2.61. Could it be reasonably regarded as a sample from a large population whose mean is 3.25cm. Use two tailed test and  $\alpha = 0.01$ .